What is CSCW?

Computer-supported cooperative work (CSCW) deals with the support for groups and their joint activities. It looks at how individual solving a problem.

How wide-spread is cooperation technology today?

Growth of WWW and Internet in early 90's
CSCW from about 1985
CMC - from 1970's
Stages of CSCW research and development
Patterns
How to understand the effects on collaboration
How to design systems for group work
Joint activities

What is CSCW?
Overview of the course

Content

Basic CSCW concepts
Research themes (grad.students)
Guest lectures
Individual assignments/themes

Schedule

Lectures/ seminars
Lab assignments (partly scheduled)

Normally in groups of 2-4 students

Literature

Dix et al: Human-Computer Interaction. 1993 or
ESCW'95 proceedings (100:-)
Sproull & Kiesler: Connections
Articles (100:-)

Examination

The course gives 6 credits for undergraduate students.
5 credits for Ph.D. students
6 credits for graduate students

1. Active participation in seminars and on-line discussions
2. Written examination
3. Lab assignments 1-5
4. Lab 4: in-depth essay on a selected CSCW topic
Deadline: May 20

Requirements

Register in the Res system
Linux system
Everyone should have an account in NADA's administration

Exam

Home exam with literature questions
Deadline: May 20

Register in the res system

Everyone should have a home page

Administration

Everyone should have an account in NADA's administration
Definitions

Dix et al:
"CSCW is about groups of users – how to design systems to support their work as a group and how to understand the effect of technology on their work patterns" (Dix et al)

Ellis et al:
Groupware: "computer-based systems that support groups of people engaged in a common task (or goal) and that provide an interface to a shared environment" (Ellis et al)

Perspectives of CSCW

Process-driven group system design
Bringing knowledge of social and communicative skill into the design

Social theory
Decentralisation of data and control
Algorithms for distributed operating systems and distributed databases

Communication
Exchange of information between remote agents
Distributed databases

Human-computer interaction
Design and implementation of human-computer interaction

WYSIWYS: Maintaining a shared context
Interface aspects, e.g.:

Perspectives of CSCW

Deixis: How to refer to common objects

Human-computer interaction
How to replace face-to-face interaction
Design for multiple media

Decentralisation of data and control
Distributed databases

Algorithms for distributed operating systems and distributed databases

Environment (Ellis et al)

Ellis et al:
"CSCW is about groups of users – how to design systems to support their work as a group and how to understand the effect of technology on their work."

Dix et al:
"CSCW is about groups of users – how to design…"
Basic concepts and taxonomies

Three major aspects of CSCW and group working

Communication
- Support for ongoing, direct communication among participants
- Establishing a “common ground”
- Effect of the medium on the communication process

Collaboration
- Support for sharing information
- Representation of group context
- Awareness of others’ activities

Coordination
- Adjusting individual contributions to fit into the overall task
- Roles and responsibilities
- Distribution of work

Example 1: Group writing task
- Planning
- Organisation to avoid conflicting or parallel work
- Who does what, and when?

Example 2: Workflow systems
- Distributed multi-user systems
- How are the intermediate results of actions organised?
- When does what, and why?
- Coordinating or parallel work

Ellis et al.
- Computer-mediated communication
- Computer conferencing
- Intelligent agents
- Coordination systems

Dix et al.
- Multi-user editors
- Electronic meeting rooms
- Support for sharing information

Ellis et al.
- Message systems
- Application axiomatics of various kinds

Ellis et al.
- Time-space axiomen
Communication systems

Synchronous
- Terminal-to-terminal connections
- MUDs, IRC

Asynchronous
- E-mail, news, distribution lists

E-mail is the most successful CSCW application

Has developed into a work-structuring tool for many users

Problem: overload

Structured message systems
- Allow easy filtering
- Less work for the receiver
- More work for the sender

E.g. Information Lens

May cause problems in acceptance

Structured message systems
- Allow easy filtering
- More work for the sender
- Less work for the receiver

E-mail, news, distribution lists
- Asynchronous
- MUDs, IRC

Research Issue 1:

To what extent should CSCW systems impose a structure on participants' interactions?

Example 2: Coordinator

Uses speech act theory to structure cooperative work

Disadvantages of structuring participant's roles and goals may develop over time.

Coordination of structured participant's interactions

The above should CSCW systems impose a structure on participants' interactions?
Research issue 2:
How should a groupware system be introduced in an organisation?

Critical mass is necessary for widespread adoption
Grudin: discretion or mandate? (ECSCW'95)

Research issue 3:
To what extent can privacy be sacrificed for the sake of cooperation?

Example: diary & calendar systems
Automatic scheduling of meetings
Efficient cooperation may demand publicly available diaries, shared in the group
To what extent can privacy be sacrificed for the sake of cooperation?

How should a groupware system be introduced in an organisation?
Questions for discussion

1. To what extent and when do you need to work synchronously when co-writing a paper?
2. Choose a database application and discuss the extent to which it is a cooperative (groupware) system.
3. To what extent is a Web site a form of groupware? How can it be modified to contain more cooperation features?

Collaborative writing

E-mail in a working context

Sharing knowledge in an organisation

Later in the course

CSCW topics later in the course

Sharing knowledge in an organisation

Synchronous group work

How can Virtual Reality enhance collaboration?